



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,165	10/23/2003	Alan Ka-Ming Wu	60680-741	8344

7590 10/18/2004

Messrs. Dykema Gossett PLLC
Suite 300
39577 Woodward Avenue
Bloomfield Hills, MI 48304-5086

EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
----------	--------------

3742

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/692,165	Applicant(s) WU ET AL.	
	Examiner Teresa J. Walberg	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/8, 3/25/04, 9/3/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kun (3,810,509).

Kun discloses a surface cooled heat exchanger including a stack of elongated plate pairs (2, see Figs. 7 and 7A) having elongate central portions surrounded by sealably joined edge portions with a fluid passage defined between the central portions, spaced apart inlet and outlet openings (see Fig. 15), and an elongated fin (4) extending peripherally outward from the joined edge portions along a length of the plate pair.

With respect to claim 2, Fig. 8 shows a varying profile along a length of the fin plate.

With respect to claims 3 and 5, Fig 5A shows a plurality of louvered slots (8) along the fin plate.

With respect to claim 6, Fig. 5E shows a fin plate having expanded convolutions (8).

With respect to claims 7 and 8, Figs. 15 and 15A shows the plates coming into contact at spaced locations and being spaced apart at central portions.

Art Unit: 3742

With respect to claims 9 and 10, Fig. 3 shows the a fin integral with only one plate and Fig 4 shows a fin integral with both plates.

With respect to claim 11, Fig 4A shows an edge portion of the second plate nested within the laterally extending flange and the fin extending from an edge of the laterally extending flange.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kun (3,810,509).

Kun, as discussed above, discloses the claimed structure with the exception of the slots being open ended and the elongated fin plate extending only from one edge.

However, it would have been obvious to extend the fin plate from only one edge to reduce the amount of materials used in making the heat exchanger and to make the slots open ended to increase the turbulence of air passing the edge of the fin plate and thus increase heat transfer.

Art Unit: 3742

5. Claims 12, 14, 16-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kun (3,810,509) in view of Hedlund (6,109,217).

Kun, as discussed above, discloses the claimed structure including a mounting bracket (92 in Fig. 24) connected to the stack of plate pairs, but does not disclose the heat exchanger being used for a snowmobile engine coolant cooler.

Hedlund discloses using a heat exchanger to cool engine coolant in a snowmobile.

It would have been obvious in view of Hedlund to use a heat exchanger as taught by Kun as a snowmobile coolant cooler to more efficiently keep the snowmobile engine from overheating.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kun (3,810,509) in view of Hedlund (6,109,217) as applied to claims 12, 14, 16-18, and 20 and further in view of Broadhurst (5,025,641).

Kun in view of Hedlund, as discussed above, disclose the claimed structure with the exception of the mounting brackets being L brackets.

Broadhurst discloses using L brackets as the mounting brackets for a heat exchanger. See col. 6, lines 28-31.

It would have been obvious in view of Broadhurst to use L brackets as the mounting brackets for the heat exchanger of Kun for easier connection to the heat exchanger and the surrounding housing.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kun (3,810,509) in view of Hedlund (6,109,217) as applied to claims 12, 14, 16-18, and 20 and further in view of Nakamura et al (3,818,984).

Kun in view of Hedlund, as discussed above, disclose the claimed structure with the exception of the stack being arcuately bent about an axis thereof.

Nakamura et al disclose a heat exchanger arcuately bent about an axis. See Figs. 7-9.

It would have been obvious in view of Nakamura et al to use a heat exchanger arcuately bent about an axis in the apparatus of Kun for easier installation of the heat exchanger into a surrounding housing.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 703-308-1327. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg
Primary Examiner
Art Unit 3742

tjw